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ABSTRACT

A study examined whether there were differences in the ways that undergraduate college students viewed their academic performance. Relationships between sex of student, motivation, self esteem, achievement, and attributional pattern utilized were examined. Subjects (132 female, 104 male) were chosen on a voluntary basis; most were enrolled in a required introductory communication course which draws widely from the university population. Students were given class time to complete a questionnaire and received extra credit. Data were collected from a series of questionnaires. The first two hypotheses addressed the relationship between locus of causality and levels of self esteem. Neither hypothesis was supported. The third hypothesis posited that a subject's level of motivation would be affected by the perceived stability of his/her performance. This hypothesis was supported. The fourth hypothesis examined the relationship between levels of self esteem and perceived controllability of performance outcomes. No support was found for this hypothesis. The fifth and sixth hypotheses examined the relationship between biological sex and locus of causality. The fifth hypothesis posited that females would attribute success externally and failure internally; the sixth hypothesis posited that males would attribute success internally and failure externally. No hypothesis was supported. (Contains 77 references.) (NKA)

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A Preliminary Analysis of Sex Differences in Attributional Patterns and Self-Esteem Levels

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Introduction

Researchers view studies which seek to establish whether or not sex differences exist as theoretically justified apart from pragmatic application. Educators, however, view proof that differences exist as interesting but only if these differences impact social behavior, affective learning, or cognitive learning in the classroom. This paper examines sex differences which 'make a difference' in attributional patterns, levels of motivation and self-esteem, and achievement in the classroom.

Attribution Theory

In achievement-oriented settings attributions are made by students when they explain their level of performance on particular tasks (Weiner & Kukla, 1970). An example of this would be a statement such as "I really studied for this exam; that's why I got an A on it." Attribution theorists, building upon the work of Heider (1944), posit that people's perceptions of the causes of success and failure are the primary influence upon achievement behavior (Covington, 1984). After reviewing studies which investigated the existence of self-fulfilling prophecies in the classroom, Brophy (1983) concluded that attributions of success and failure of student work appear critical in determining learner outcomes. These attributions determine students' subsequent levels of achievement and their attitudes toward learning.

Attributional Dimensions of Causality

Weiner and his colleagues note three dimensions of causality: a) locus--the location of a cause, internal or external to a person; b) stability--whether the temporal nature of the cause is relatively enduring or changes from situation to situation; and c) controllability--degree of influence the individual can exert over the cause. These dimensions have corresponding psychological consequences (Weiner, 1983b).

The locus affects self-esteem (Weiner, 1980a). Success attributed to internal factors (ability, effort) results in greater increases in self-esteem than when attributed to external factors (luck, degree of task difficulty). Failure attributed to low ability causes greater self-esteem losses than failure attributed to luck (Forsyth & McMillan, 1981; Weiner, 1977; Weiner, Russell, & Lerman, 1978, 1979; Whitley, 1987). A process of "defensive effort" (Archibald, 1974) may occur. When we anticipate failing we put forth less effort. Then, if we fail, we can say that if we had cared enough to try harder we would not have failed. While serving as protection from attributional implications of failure, lower expenditures of effort may increase failure outcomes. Boys exert more effort when failing than when succeeding while girls exert comparable levels of effort whether succeeding or failing (Nicholls, 1975). This may enable boys to succeed more often than do girls and for boys to attribute failure to bad luck. By applying comparable levels of effort, girls are not able to

clearly attribute success to ability and may reinforce self-derogatory ability attributions. More recently, Thompson, Davidson, and Barber (1995) noted that self-worth theory states that after students have failed once, to fail a second time would prove low ability. Rather than risk that some students will withhold effort so failure can be blamed on lack of effort rather than lack of ability. Lowered estimations of ability would result in lowered levels of self-esteem. This phenomenon is referred to as self-worth protection. However, when another factor can be deemed responsible for failure, then future effort and performance is unaffected. In these cases, locus of cause for failure effects future levels of self-esteem and effort unless face-saving opportunities are given to students.

Perceived stability affects changes in expectancy of future outcomes and affective responses (Weiner, 1979, 1980b, 1985; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971). The more stable the cause is perceived to be, the greater the expectancy for similar future results, with internal factors generally being viewed as more stable than external factors. When the present situation is gloomy with no anticipated change in sight, learned helplessness may result.

Controllability affects our reactions to and evaluations of others. Failure or help needed when attributed to controllable causes (lack of effort) usually elicits anger and negative evaluations; however, when attributed to uncontrollable causes (physical handicap) failure usually elicits sympathy and positive evaluations (Weiner, 1980a).

By adulthood, assessments of competence often determine our self-worth. Many educators, however, feel students should adopt a work ethic, viewing effort as the primary determinant of self-worth (Covington, 1984). Thus, students with low self-esteem are in a double bind; they negatively assess their own ability and place a lower value on effort expended than the educator does. Studies of sex differences in self-esteem levels yielded mixed results. Some found no differences (Drummond, McIntire, & Ryand, 1977; Seidner, 1978; Zuckerman, 1980), however, others found that men had higher levels of self-esteem than did women (Berger, 1968; Gold, Brush, & Sprotzer, 1980; Judd & Smith, 1974; Loeb & Horst, 1978; Smith & Self, 1978; Stoner & Kaiser, 1978). From adolescence on, social comparison information plays a major role in estimates of one's own ability (Rosenholtz & Simpson, 1984). Lower self-esteem and lower estimates of ability may cause women to view failure as uncontrollable (unavoidable) and leave them with little motivation and/or hope for future success. Thus, the dimensional placement of causal ascriptions impacts a student's ongoing level of motivation and attitude toward learning.

Effects of Attributional Patterns

Current thinking, (Weiner, 1983a), holds that either an attribution of failure to external circumstances (i.e., bad luck or hindrance of others) or an attribution of failure to low ability (internal factor) may be debilitating. The least debilitating explanation for failure is to claim that insufficient effort has been expended. The most debilitating explanation for failure is to internal, stable, uncontrollable factors (i.e., level of ability) as feelings of helplessness are likely to result.

Sex Differences

Sex differences in achievement behavior are due to sex role socialization (Lochel, 1983). Work and achievement are seen as part of the male role; activities which comprise the female role were economically and socially seen as 'non-work' (Oakley, 1974). Girls are socialized according to a double standard, they are encouraged to do well at school, but they are expected not to 'beat' men (Horner, 1972; Maccoby & Jacklin, 1974). Maehr and Nicholls (1980) question whether or not the "goal of behavior in 'achievement situations' is the same for males and females" (p. 244). Research suggests that females are less actively achievement-oriented than males (Brown, 1983; Deaux, 1976; Erkut, 1983) but this conclusion is problematic for two reasons: 1) "the situation and tasks used in the study of achievement behavior reflect a masculine definition of achievement more than a feminine definition" (Erkut, 1983, p. 245), and Deaux and Emswiller (1974) provide examples of this; and 2) the conception and interpretation of achievement behavior is usually consistent with ability-oriented achievement motivation which is reasonably appropriate for males but not for females. By representing female behavior from a masculine point of view misleading conclusions have been drawn (Deaux & Emswiller, 1974; Erkut, 1983). Furthermore, attributional patterns for boys and girls differ because "when asked to explain academic outcomes girls and boys have different conceptions of what success and failure are and, therefore, are explaining different 'things'. Boys, but not girls, clearly see intellectual competence as a goal" (Erkut, 1983, p. 248-9).

The results of attributional studies of sex differences are mixed (Frieze, Whitley, Hanusa, & McHugh, 1982). In general, women have been found to attribute success to high ability less frequently than men and to attribute failure to low ability more frequently than men (Bar-Tal, Goldberg, & Knaani, 1984; Brown, 1983; Deaux, 1976; Deaux & Emswiller, 1974; Feldman-Summers & Kiesler, 1974; Griffin-Pierson, 1986). Callaghan and Manstead (1983), studying attributions made by sixth graders, found that females attributed "more importance to 'help from teachers' and to 'help from others' than males did" (p. 21) when explaining public examination outcomes. The authors acknowledged that this pattern may be an artifact of females' greater willingness to acknowledge external factors responsible for success outcomes.

Sex differences do not appear to decrease as students grow older. Reyes (1984) found: "Patterns of attributions for mathematics success/failure do seem to differ for high school females and males, and attributions are related to achievement" (p. 571). Stipek and Gralinski (1991) note that the same attributional patterns persist with girls rating their mathematical ability lower, attributed failure to low ability while boys attributed failure to luck; girls were less likely than boys to attribute success to high ability. Felson and Trudeau (1991) found lower class grades and SAT scores for girls than for boys in Grades 5 through 12. Han and Hoover (1994) note that in a review of standardized test scores from 1963 to 1992 that after age 15 males score higher on mathematical computation tests. Thus,

traditional sex differences continue. Serbin, Zelkowitz, Doyle, and Gold (1990) reported that we may be able to equalize math performance by making traditionally male toys available to females who are suffering a "practice deficit" from lack of activities and experiences to develop visual-spatial skills. Daly, Kreiser, and Roghaar (1994) found that males, ages 13 - 16, were more comfortable asking questions in the classroom compared to females, particularly in math, science, and social studies. Question asking contributes to learning and this sex difference in behavior may account for lower grades and scores for females in mathematics. Entwistle, Alexander, and Olson (1994) posit that neighborhood resources which support intellectual development cause achievement differences because boys spend more time "out" in their neighborhoods than do girls.

DeBoer (1983) found that among college freshmen, women in general attribute success primarily to effort while men attribute success to ability. Erkut (1983) also found that male college students made more ability attributions than females did. In a study of college women, Welch, Gerrard, and Huston (1986) found that the high instrumental group attributed success internally and failure externally while the low instrumental group reversed these patterns. Females with an external locus of control are more likely to utilize debilitating attributional patterns than do those with an internal locus of control (Brown, 1983; Rovner, 1981).

Dweck and Bush (1976) examined another aspect of the classroom situation, studying the effects of feedback from adult and peer evaluators upon fifth grade boys and girls. They found that girls attributed failures to lack of ability when feedback was received from adult but not peer agents; the reverse pattern occurred with boys. Dweck, Davidson, Nelson, and Enna (1978) found that male students paid attention to teacher praise but discounted teacher criticism. However, females discounted teacher praise but were discouraged by teacher criticism. In this study it was noted that teacher praise varied by sex of student, with females receiving comments about form (neatness) while males received comments relating to substance (correct answer). Generally, boys receive more evaluative feedback than girls, particularly negative feedback. Certainly the amount and type of feedback could effect student reactions. Nonetheless, since ability is considered an uncontrollable factor, the consequences of attributing failure to low ability are potentially very debilitating. Another explanation for sex differences may be that while males and females are equally attentive to social cues in achievement settings and equally adept at decoding the verbal cues females were more aware of nonverbal cues (Roberts, 1991). More recently, researchers have begun to study the effect of feedback from parents who view math as more difficult for girls than for boys and may be discouraging girls from enrolling in math classes (Chess & Hertzig, 1990), or encourage sex-stereotyped socialization which may be thwarting mathematical development in girls (Serbin, et al., 1990).

However, Vispoel and Austin (1995) found that regardless of sex junior high students made self-serving attributions (taking personal responsibility for success

but not for failure). They also found evidence of an altruism effect: more likely to credit success to others than blame them for failure. In fact, few of these students considered their performances failures. Perhaps high levels of academic self-concept or high past achievement levels makes them reject the notion of their own performance being a failure. Dietrich (1995) did find sex differences when working with college students. In fact, using tasks relating to social competence and academic ability she found that males used more self protective attributions to "preserve their competence image regardless of the domain" (p. 408).

Geiger and Cooper (1995) noted that need for achievement was not a predictor of actual performance for college students. However, the attractiveness of increasing their grade (study used "from a B to an A") "was most closely related to GPA and was the single best predictor of individual GPA" (p. 259). Decisions concerning level of effort are influenced more by individuals perceived likelihood of a desired outcome (high GPA) than by perceived likelihood of actually attaining that outcome (high GPA).

DeBoer (1983) found that among college freshmen, women in general attribute success primarily to effort while men attribute success to ability. Erkut (1983) also found that male college students made more ability attributions than females did. Perhaps later life attitudes are affected by earlier socializing as Tong and Yewchuk (1996) noted that for adolescent gifted females accepting sex-role stereotypes results in less confidence in their ability and competence and may be a barrier to their achievement. A nationwide study of three thousand students, ages 9 - 15 found that "as girls and boys grow older, both experience a significant loss of self-esteem in a variety of areas; however, the loss is most dramatic and has the most long-lasting effect for girls" (AAUW, 1991, p. 3). Yet, Mboya (1993) found when academic self-concept was measured rather than global self-concept, that tenth grade girls exhibited higher levels of self-concept (x=30.5) than tenth grade boys ($\underline{M}$=29.3). Mboya also noted that numerous studies had found no sex differences. But Mboya also found that academic self-concept scores were positively related to levels of academic achievement. To improve performance, teachers may need to improve academic self-concept. And when using adults, Gigliotti and Gigliotti (1996) found no sex differences in academic self-concept or global self-concept although it did vary by age with increasing levels until the 36-40 age category and then it dropped significantly. Academic self-concept was again unrelated to motivation.

In summary, the attributional patterns students employ do appear to make a difference. The degree to which attributional differences are sex related, however, merits further study. LaNoue and Curtis (1985) call attention to works noting the relatively poor achievement of women in mixed-sex situations (e.g., Kaufman & Richardson, 1982; Lenney & Gold, 1982; Stockard & Johnson, 1980). Lower achievement and lower self-esteem potentially offset many opportunities for women. This gloomy forecast is echoed by a related line of research, learned helplessness. The explanation of the effects of attributional patterns is consistent with Abramson,

Seligman, and Teasdale's (1978) explanation of learned helplessness. Brown and Inouye (1978) found motivational, cognitive, and emotional deficits in individuals experiencing learned helplessness. Both learned helplessness and attribution research find that debilitating attributional patterns maintain dysfunctional student learning behavior.

These research findings have stimulated the recent research in developing achievement change programs based on attributional principles (e.g., Forsterling, 1985). Research on attribution retraining may provide insights for all educators seeking to increase student motivation, self-esteem, and achievement. Future research should focus more on the task - sex appropriateness, familiarity, and the context in which it is performed (McHugh, Frieze, & Hanusa, 1982) - and on communicative aspects of the attributional process. As communication educators, our ultimate concern is the role of teacher talk in shaping attributional patterns. There is a relatively new, but growing body of research which indicates that exposure to postsecondary education causes individuals to make increasingly more internal locus of control attributions. In particular, "high levels of teacher organization and preparation, teacher instructional skill and clarity, and teacher support" (Pascarella, Edison, Hagedorn, & Nora, 1995, p. 17). Gigliotti and Gigliotti (1996) found that faculty should try to have positive interactions with adult students. It may be that older adult students assume they have the right to speak and to be listened to. Professors who fail to listen or show positive regard for their comments violate student expectations. Such violations make adults feel less effective and result in lowered levels of academic self-concept and negatively affect future outcomes.

Overview of Study

This study sought to determine if their were differences in the ways that college students viewed their academic performances. Relationships between sex of student, motivation, self-esteem, achievement, and attributional pattern utilized were examined. Numerous authors have argued that attributional research should examine the perceived attributions offered for real life events. Laboratory studies and those which use hypothetical scenarios are problematic because subjects' success and failure perceptions are assumed and/or researchers inaccurately assume that if a student doesn't view a performance as a success s/he views it as a failure (Vispoel & Austin, 1995). There are ethical concerns which accompany the use of situations which manipulate success and failure outcomes. Finally, a student's performance on a task may be partially determined by the importance the individual places on succeeding at the task. To ensure a lack of manipulation of outcomes and that the task is perceived as relevant this study examines attributional patterns employed for explaining performance on graded assignments.

Dimensions of Attributions

Since previous research does not agree on the existence of differences in attributional patterns and/or their psychological consequences these areas will be examined.

externally should result in higher levels of self-esteem while success attributed externally and failure attributed internally should result in lower levels of self-esteem.

H1: Individuals who attribute success internally will exhibit higher levels self-esteem than those who attribute success externally.

H2: Individuals who attribute failure internally will exhibit lower levels of self-esteem than those who attribute failure externally.

Stability. As noted earlier, stability affects changes in expectancy of future outcomes. The more stable the cause the greater the expectancy for similar future results.

H3: Individuals who attribute past success to stable factors and past failure to unstable factors will have higher levels of motivation for future achievement behavior than those who attribute success to unstable factors and failure to stable factors.

Controllability. As noted earlier, here an assessment is made of whether an individual has control over the cause or not. Students with higher levels of self-esteem probably see themselves as having more control over academic outcomes.

H4: Individual's level of self-esteem and level of controllability will be positively related.

Sex Differences

Noting that past research does not agree on whether or not sex differences exist in students' attributions the following areas will be examined.

H5: Females will attribute success externally and failure internally.

H6: Males will attribute success internally and failure externally.

Sample

Subjects (132 female, 104 male) were chosen on a voluntary basis from courses in the Communication Department at a medium sized midwestern public university. Most of the subjects were enrolled in an introductory communication course which is a graduation requirement of the university so these sections draw widely from the university population. Of the 236 participants, 127 were freshmen, 46 were sophomores, 29 were juniors, 19 were seniors, 13 were graduate students, and four were 'other'. Students were given class time to complete the questionnaires and in most cases received extra credit.

Instruments

Motivation. This was assessed through a four item general measure of school motivation designed by the researchers and patterned after Entwistle and Kozeki's (1985) school motivation measure. Item responses ranged from 1=strongly agree to 5=strongly disagree. Scores could range from 4-16 on this scale. Low scores indicated high levels of motivation. Scores on the 4-item scale ranged from 4 to 16 (M=6.3, SD=2.4). Previous research using a similar 5 item scale reported reliability coefficients of .86, .93, and .89.

Causal Dimensions. The Causal Dimension Scale is a structured response measure designed to assess subjects' perception of placement of causal ascriptions on

attributional dimensions. Researchers disagree on whether the specific causal ascription is most important or whether its placement on underlying dimensions (locus of causality, stability, and controllability) is most important. Past studies usually involved the researcher using an a priori categorization scheme. "When the dimensionality employed by subjects does not match the dimensionality assumed by the experimenter...unreliable results and consequent misinterpretations are likely to occur" (Streufort & Streufort, 1980p. 185-186). The interpretation of causal ascriptions may even vary over time and between people and situations (Weiner, 1985). Subjects assessed their causal ascriptions on the Causal Dimension Scale (Russell, 1982); however, the original scale used 9 point items and in this study 5 point items were used to make the scale comparable to other scales used in this study. This 9-item scale consists of three subscales: locus (3-items), stability (3-items), and controllability (3-items). Subscale scores are determined by summing the three items; subscale scores may range from 3 to 15. On the locus subscale low scores indicate external ascriptions and high scores indicate internal ascriptions. In this study locus of causality subscale scores ranged from 3 to 15 (M=7.1; SD=2.8). On the stability subscale low scores indicate stable ascriptions and high scores indicate unstable ascriptions. On the stability subscale scores ranged from 3 to 15 (M=7.95; SD=2.8). On the controllability subscale scores ranged from 3 to 15 (M=6.94; SD=2.6). Past research reported reliabilities of .87-.88 for the locus subscale; .84-.88 for the stability subscale; and .73 for the controllability subscale.

Self-esteem. This construct was assessed through the use of Rosenberg's (1965) 10-item Self-Esteem Scale. Again, in order to have this scale more closely resemble other scales in the study, items were assessed on 5-point scales rather than the 4-point scale employed by the original instrument. Scale responses ranged from 1=strongly agree to 5=strongly disagree. Scores could range from 10 to 50 with a low score indicating high self esteem. In this study scores ranged from 10 to 42 (M=20.9; SD=6.9). Past research using 4-point scales reported a reliability coefficient of .92. Past research using 5-point scales reported reliability coefficients of .83, .81, and .80.

Performance assessment. This study used subject assessed measure of success and failure by evaluating their own performance on a 5-point continuum with 1=complete success to 5=complete failure. The task they were asked to assess was a major test they had recently taken and for which they knew the grade they had received. A structured response format was utilized because: 1) structured measures yield higher reliabilities; and 2) convergent and discriminant validities are satisfactory--while open-ended measures lack these qualities (Elig & Frieze, 1979). In a classroom setting students tend not to see their performance as strictly a success or failure (Strohkirch, 1987). There is a need to consider a mixed response and to remember that students do not consider everything that is not a success as a failure (Vispoel & Austin, 1995).

Next, students were asked to state the grade received (A, B, C, D, E) on the test. Then using another structured response item students were asked to describe the degree to which this grade was expected with 1=very highly expected and 5=very

highly unexpected. Finally students were asked what grade (A, B, C, D, E) they expected to receive on the next test in this class. Hopefully students accurately reported grades as no attempt was made to verify their accuracy (yes, we realize this is a limitation of the study).

Results

The first two hypotheses addressed the relationship between locus of causality and levels of self-esteem. Each subject's score on the locus subscale of the Causal Dimension Scale (Russell, 1982) was used to assess locus of causality. Each subject's score on the Self-Esteem Scale (Rosenberg, 1965) was used to assess level of self-esteem.

Neither hypothesis was supported. Perhaps we need to study this issue over time and look at change scores in self esteem for subjects. Also, by using subject assigned performance outcomes we had notably fewer failure outcomes (17.7%) than success outcomes (57.1%) and 24.8% part success/part failure.

The third hypothesis posited that a subject's level of motivation would be affected by the perceived stability of her/his performance. This hypothesis was supported ($F=13.15$; $df=1, 129$; $p=.001$).

The fourth hypothesis examined the relationship between levels of self-esteem and perceived controllability of performance outcomes. No support was found for this hypothesis.

The fifth and sixth hypotheses examined the relationship between biological sex and locus of causality. The fifth hypothesis posited that females would attribute success externally and failure internally. The sixth hypothesis posited that males would attribute success internally and failure externally. ANOVA's were executed using subject's scores on the locus subscale as the dependent variable with biological sex and subject's performance assessment (success-failure) serving as the independent variables. Neither hypothesis was supported.

In examining the relationship between locus of causality and biological sex a significant relationship was found: $F(1, 232)=5.36$, $p=.02$.Males did have a significantly higher level of self-esteem($\underline{M}=19.5$) than females ($\underline{M}=21.5$).

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